

7

In the embodiment described, the maximum linear velocity is  $\times 8$ . This however does not impose a limitation. The invention is applicable to an optical disk reproducing device capable of operating at an even higher linear velocity.

What is claimed is:

1. An optical disk reproducing device comprising:

means for rotating an optical disk;

means for reading data from the disk while the disk is rotated;

means for detecting vibration or shock of the device during rotation of the disk; and

velocity control means for determining a limit rotational velocity of the disk above which the vibration or shock is excessive by varying the rotational velocity of the disk, and when data is read from the disk, causing the disk to rotate at a rotational velocity which is not higher than said limit rotational velocity.

2. The device according to claim 1, wherein said velocity control means causes the rotational velocity to decrease gradually, and finds the rotational velocity at which the vibration or shock is not excessive for the first time as said limit rotational velocity.

3. The device according to claim 1, wherein said velocity control means performs the determination of said limit rotational velocity each time a disk is inserted.

4. The device according to claim 1, wherein said device can selectively operate in a test mode or in a reproduction mode, and

said velocity control means performs the determination of the limit rotational velocity in said test mode, and performs the control over the rotational velocity so that the rotational velocity does not exceed the limit rotational velocity.

8

5. The device according to claim 1, further comprising: a lens for converging the laser beam illuminating the disk; and

tracking means for detecting a tracking error and moving the lens in the radial direction of the disk, wherein said detecting means detects the vibration responsive to operation at the tracking means.

6. The device according to claim 5, wherein said tracking means detects the tracking error based on light reflected from the disk.

7. The device according to claim 5, wherein said detecting means detects the vibration based on the electromotive force generated in the tracking means.

8. The device according to claim 1, further comprising a lens for converging the laser beam illuminating the disk; and

focusing means for detecting a focusing error and moving the lens in the focus adjustment direction of the disk, wherein said detecting means detects the vibration responsive to operation at the focusing means.

9. The device according to claim 8, wherein said focusing means detects the focusing error based on light reflected from the disk.

10. The device according to claim 8, wherein said detecting means detects the vibration based on the electromotive force generated in the focusing means.

11. The device according to claim 1, wherein said rotating means rotates the disk at a selected one of a plurality of rotational velocities; and

said velocity control means selectively sets the velocity to be one of said rotational velocities for varying the rotational velocity, and for causing the disk to rotate at the selected velocity when data is read.

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